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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,201	12/14/2001	Jeffrey D. Walker	15436.247.45.1.2	6333

22913 7590 04/09/2004

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EXAMINER

MOSKOWITZ, NELSON

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,201

Applicant(s)

WALKER ET AL.

Examiner

Nelson Moskowitz

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/9/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

1) Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verma et al (hereinafter "Verma") in view of Applicant's admission of prior art (inter alia, specification at pages 2-4).

In determining obviousness, the following factual determinations are made:

- a. First, the scope and content of the prior art.
- b. Second, the difference between the prior art and the pending claims.
- c. Third, the level of skill of a person on ordinary skill in this art;
- d. Fourth, whether other objective evidence may be present, which indicates obviousness or nonobviousness. See, e.g., *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d (BNA) 1614, 1616 (Fed. Cir. 1999) citing *Graham v. John Deere Co.*, 383 US 1, 17-18, 148 USPQ2d (BNA) 459, 466-67 (1966).

Objective evidence includes long felt but unmet need for the claimed invention, failure of others to solve the problem addressed by the claimed invention, and other factors. See e.g. *Simmons Fastener Corp. v. Illinois Tool Works, Inc.*, 739 Fed. 1573, 1574-76, 22 USPQ 744, 745-47 (Fed. Cir. 1984).

Examining the scope and content of the prior art one finds that Verma discloses the claimed invention, except for the specific kinds of receivers, cladding and waveguides. See, inter alia, Verma's disclosure at col. 3, lines 7-28; col. 4, lines 3-52; claim 26. Verma's system is noted (col. 3) to provide low turn-on voltages, low power consumption, and low heat generation.

Applicant's discussion of the history of optical communication systems shows the old and well known use of semiconductor amplifiers, with the problem of TDM crosstalk.

Secondly, under Deere, the difference between the claimed invention and the prior art lies in the combination of the amplifier of Verma in an optical signal transmission system.

Third, under Deere, the level of ordinary skill in this art may be determined by the analysis of the Court as set forth in Environment Designs Ltd. v. Union Oil Co., 713 F. 3d 693, 281 USPQ 865-69 (Fed Cir. 19830 cert. denied, 464 1043 (1984)), where the court listed factors relevant to a determination of the level of ordinary skill; type of problems encountered in the art, prior art solutions, rapidity of innovations, sophistication of technology, and educational level of active worker in the field.

The types of problems encountered in the art involve third order induced noise in the amplifier system, and the need of broad bandwidth.

Innovation in this field has been very fast as can be seen from virtual birth of this field in the 1970s to its present highly complex and sophisticated status.


Prior art solutions includes semiconductor amplifiers for amplifying signals at all stages of the communication systems. Skilled artisans generally have graduate level education and over seven (7) years of experience, as can be seen from published articles in the major journals in this field, e.g. IEEE Photonics Technology Letters, Optical Communications, Optics, Optical Fiber Technology, Electronics Letters, etc.

To date, no secondary consideration (objective evidence) has been presented.

Therefore, as the above prior art taught the improvement in operation using orthogonal lasing-amplifying system, and pumping above a laser threshold to clamp a gain, it would have been *prima facie* obvious to one skilled in this art to use such system for an optical communication system as claimed.

- 2) The references cited by Applicant have been considered and found exemplary of the prior art.
- 3) Applicant is required to update the status of all patent applications cited in their disclosure.
- 4) References B-F are cited to show prior art semiconductor amplifiers with gain clamping (note inter alia, Wang at col. 1, paragraph 0005) , and Applicant's related patents.
- 5) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Moskowitz whose telephone number is 703-306-4165. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 4:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Thomas Black, can be reached on (703) 306-4171. The before final fax phone number for the organization where this application or proceeding is assigned is 703-872-9326. The after final fax phone number for the organization where this application or proceeding is assigned is 703-872-9327.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


NELSON MOSKOWITZ
PRIMARY EXAMINER